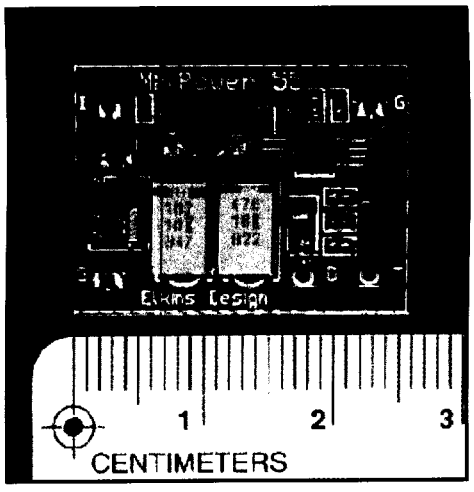


MiniPower 55

DC to DC Converter

Congratulations! You have purchased the finest miniature Switch-Mode power supply for your projects. Due to its high efficiency this converter operates over the full life of one or two alkaline cells. By design, the MiniPower regulator discharges a battery under **constant-power, which provides for the most efficient use of the battery's energy**. Unlike shunt regulators, the MiniPower series do not function by wasting precious energy as heat, and will continue to provide power until the batteries are completely exhausted. By contrast, a typical linear shunt regulator providing 5V from a 9V "transistor" battery will not fully discharge the battery before falling out of regulation, while "throwing away" 4V as heat in the process. The typical 9V battery costs about twice as much, and has a fraction of the capacity of two AA-size cells. Your new MiniPower converter has been engineered with the finest components available to provide trouble-free performance.

FEATURES

- 5V or 3.3V Output
- 87% Average Efficiency
  (1.8V to 3.1V input, Min to Max load)
- Low Switching Ripple – 35mV Typical
- Low-Battery Output Flag
  (user configurable for 1.8V or 0.9V)
- Low-Noise Anti-Ringing Feature
- Shielded Inductor for Low EMI
- Logic-Controlled Shutdown
- Reversed-Battery Protection
- Over-Voltage-Transient Protection

PRELIMINARY

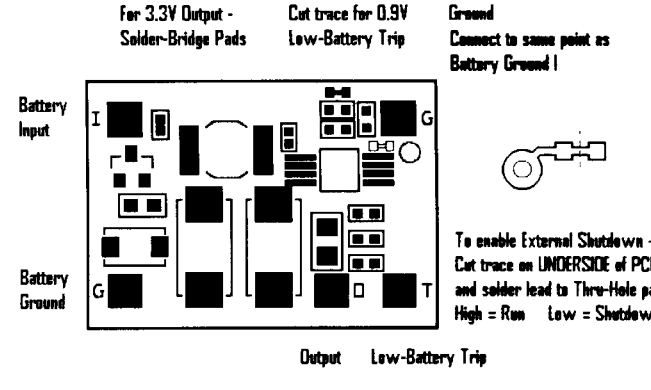
SPECIFICATIONS

(TA=+25 C)

PARAMETER	COND.	MIN	MAX
Input Voltage (1)			± 5V
Operating Voltage (2)		+ 0.9V	Vout
Output Voltage (Typical)	No Load 5V, 3.3V		± 5% (± 1%)
Max. Output Current	Vout –5%		
1.8 to 3.1V Input (2 Cells)	5.0V	55mA	110mA
	3.3V	85mA	130mA
0.9 to 1.5V Input (1 Cell)	5.0V	20mA	45mA
	3.3V	25mA	65mA
Output Ripple (Typical)	0.9V to 3.1V In		45mV (35mV)
Switching Frequency		10 Hz	150 kHz
Low-Battery Trip	High to Low		1.8V/0.9V ± 5%

1. Inputs greater than 5.3V applied longer than 2-5 sec. ***may cause damage!***
2. 5.0V: Startup at 0.9V with 20mA load.
   3.3V: Startup at 1.1V with 25mA, or 0.9V – No load. Operates to 0.8V with 5V/10mA or 3.3V/15mA load. (Typically operates down to 0.7V at reduced load).

CONFIGURATION


For 3.3V Output - Solder-Bridge Pads
Cut trace for 0.9V Low-Battery Trip
Ground Connect to same point as Battery Ground !
Battery Input
Battery Ground
I
G
G
O
T
To enable External Shutdown - Cut trace on UNDERSIDE of PCB, and solder lead to Thru-Hole pad. High = Run Low = Shutdown
Output
Low-Battery Trip